Cell Phone Towers:

Questions and Answers about Health

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- Cell phone towers (base stations) hold the antennas that send and receive signals from cell phones using radiofrequency radiation (energy).
- Other sources of radiofrequency energy include microwave ovens, GPS devices, radar, radio and television broadcasting, cell phones, baby monitors, Bluetooth devices, wireless networks (wifi) and cordless phones.
- Scientists generally agree that radiofrequency energy from cell phone towers is too low to cause health effects as long as people do not come into close contact with an-

How do cell phone towers work?

Cell Phone Towers (also called Base Stations), have electronic equipment and antennas that send and receive signals to and from cell phones. Antennas may be attached to free-standing towers or structures or may be mounted on non-tower structures such as building rooftops, billboards or church steeples. For aesthetic reasons, sometimes antennas are camouflaged in artificial trees or in architectural features of a building.

Communications between cell phones and base stations use radiofrequency (RF) radiation (energy). Other devices emitting RF radiation are cell phones, microwave ovens, radio and television broadcasts, GPS and Bluetooth devices, radar, baby monitors, wireless networks (wifi), and cordless phones. RF energy is different from stronger types of radiation such as x-rays which can damage cells in the body.

Cell phone tower antennas are usually sector, or panel antennas. They direct their energy towards the horizon in a narrow beam, much like a spotlight. Energy is not transmitted down to the ground or behind the antenna. The RF energy emitted by the antenna is strongest within the narrow beam, directly in front and very close to the antenna. The energy level decreases dramatically as you move away from the antenna. Typically, not all the panels transmit signals; some panels are only for receiving signals.

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What are the safety standards for cell phone towers?

The Federal Communications Commission (FCC) sets exposure limits for RF energy from cell phone tower antennas. The FCC limits are based on standards developed by national and international organizations and consider the heating effects of RF energy. The standards also include safety factors to account for uncertainties in the scientific knowledge about health effects from RF radiation exposure. Cell phone tower antennas must not cause people to be exposed to RF energy levels exceeding the FCC limits. This is why public access to cell phone tower antennas is often restricted and/or posted with warning signs. If people are allowed to come into close contact with the transmitting portion of an antenna, they could be exposed to RF levels that are too high. In unrestricted areas, RF energy is well below the FCC limits.

Do cell phone towers pose a health risk?

There is agreement in the scientific studies that RF energy from cell phone tower antennas is too low to cause health risks as long as people do not come into close contact with the antenna. Measurement studies show that RF energy levels in homes, schools and businesses located below and next to cell phone towers and antennas are hundreds and even thousands of times below safety standards. However, if you approach the radiating surface of an antenna, you could be exposed to levels of RF energy that exceed safety standards. The safe distance to keep away from an antenna depends on many factors including the antenna type, the operating power of the antenna, the direction of the transmitted beam, and the presence of shielding materials such as buildings. In general, distances greater than 25 feet from the radiating beam of an antenna are far enough to prevent exposure to RF radiation exceeding safety standards.

Who regulates where a cell phone tower is located?

The CT Siting Council must approve the location of a cell phone antenna when it is mounted on a free-standing tower or structure, such as an electric transmission line pole. Individual towns approve the location of a cell phone antenna when it is mounted on a non-tower structure, such as a building rooftop, billboard or church steeple. The Siting Council maintains a database of cell phone tower and antenna sites.

For More Information

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Federal Communications Commission (FCC)